

Printed December 1998

Total Printing Cost-\$1,350

Total Number of Documents Printed-2,500

Total Cost Per Unit-\$.30



STARTING A RECYCLING PROGRAM

A GUIDE TO DEVELOPING A RECYCLING PROGRAM FOR YOUR BUSINESS OR ORGANIZATION

This guide is intended to provide businesses and organizations with information about how to set up a recycling collection program and contribute to South Carolina's solid waste reduction and recycling efforts. While this booklet does not offer all the solutions to our solid waste problems, it does provide ideas on how to manage and reduce the amount of garbage being thrown away.



Please contact the Office of Solid Waste Reduction and Recycling if you have any questions or comments about organizing a recycling program for your business or group.

S.C. Department of Health and Environmental Control
Office of Solid Waste Reduction and Recycling
2600 Bull Street
Columbia, SC 29201
1-800-SO-USE-IT (768-7348)

Written and edited by: Charlotte Pitt, Richard Chesley
and Elizabeth Rosinski
Layout and design: Cristi Horne

Printed on Recycled Paper

TABLE OF CONTENTS

WHY RECYCLE?	page 3
GET STARTED!	page 4
PUT TOGETHER YOUR RECYCLING TEAM	page 4
HOW DO YOU KNOW WHAT TO COLLECT?	page 5
SET GOALS	page 5
WASTE REDUCTION	page 6
MARKETS	page 7
LOGISTICS	page 7
MONITORING THE PROGRAM	page 8
EDUCATING PARTICIPANTS	page 8
BUY RECYCLED	page 9
APPENDIX 1 WASTE AUDIT	page 10
APPENDIX 2 WASTE CONVERSION FIGURES	page 16
APPENDIX 3 RESOURCES	page 21
APPENDIX 4 FUN FACTS	page 23

APPENDIX 4

FUN FACTS

Each ton of recycled paper saves:

- 17 trees
- 380 gallons of oil
- 4,102 kilowatt-hours of electricity
- Three cubic yards of landfill space
- 7,000 gallons of water

A recycled aluminum can take 95 percent less energy to make than a new can from virgin bauxite ore.

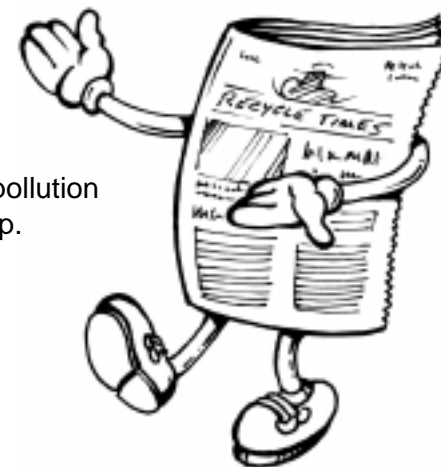
Each ton of glass recycled saves:

- 1 ton of natural resources and
- 25-32 percent of the energy used to make new glass.

If every American reused paper grocery sacks for just one grocery trip, we might save as many as 60,000 trees.

If all the phone books in the nation were recycled in one year, we could save as much as 2 million cubic yards of landfill space.

- Since 1950, Americans have used more resources than everyone who ever lived before them.
- Making new paper from old paper generates 74% less pollution than making paper from pulp.



THE KEEP AMERICA BEAUTIFUL, INC. GUIDE TO WASTE IN THE WORKPLACE - A small business guide for auditing commercial waste, identifying recyclables, minimizing waste and managing disposal costs. For additional information call KAB at (203) 323-8987.

SOUTH CAROLINA RECYCLES-A DIRECTORY OF RECYCLING PROGRAMS AND MARKETS- Contains a list of recycling businesses that service South Carolina and a guide to county and municipal recycling programs. To receive a free copy, please call DHEC's Office of Solid Waste Reduction and Recycling at 1-800-SO-USE-IT.

THE INTERNET

The Internet can provide useful information about recycling in businesses. If you search the Internet using keywords like "office recycling," "business recycling," "waste prevention in businesses," etc. you can find information from organizations that assist businesses with recycling efforts, find information from individual businesses talking about their waste reduction and recycling efforts, and information from many county and municipal programs around the country describing some of the services they offer to businesses.

OFFICE OF SOLID WASTE REDUCTION AND RECYCLING

The Office of Solid Waste Reduction and Recycling was created by the S. C. Solid Waste Policy and Management Act of 1991. The purpose of the office is to provide technical assistance, education and grant assistance to local governments, schools and the public regarding solid waste management. The Office maintains a Resource Center that is open to the public. It carries a variety of educational materials, including industry and trade journals, books, video tapes, sample products, EPA documents and miscellaneous materials covering most recycling topics. For more information call us at 1-800-SO-USE-IT or visit our Website at <http://www.state.sc.us/dhec>.

WHY RECYCLE?

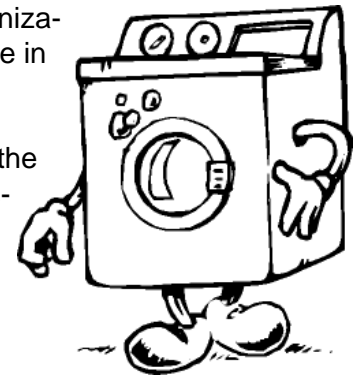
One of the most-talked about topics of the 90s is recycling. You hear it on the news, read about it in the paper, and maybe your children come home from school talking about the three R's - reduce, reuse, recycle. But why has recycling become the buzz word of the decade? And, as a business, what do you need to know and how do you get involved?

Did you know that waste from commercial businesses accounts for more than 20 percent of the total municipal solid waste generated in South Carolina? That means, in 1997, commercial businesses generated more than 1.7 million tons of garbage. While the amount of trash we generate continues to grow, the number of places we have to dispose of it continues to shrink. There are fewer landfills because they have to meet tougher, more expensive, federal regulations. New landfills are also very difficult to site. People don't want a landfill in their community or near their homes and schools. It is also becoming more expensive to dispose of waste. So what are some other options?

Recycling is one alternative to trash disposal and can be used in conjunction with a number of other waste management practices. Recycling can offer several benefits for your organization including: saving you money; serving as a good public relations tool; preserving valuable landfill space; and saving natural resources and energy.

Our throwaway lifestyle needs to become a thing of the past. We need a better understanding of how to manage our trash responsibly. It is the responsibility of all South Carolinians, including businesses, organizations and individuals to manage garbage in a way that protects our environment for future generations.

This booklet is designed to provide the basic steps needed to set up a successful recycling program in your business or organization. It also provides a list of resources to help you find additional information.



GET STARTED!

Get the support of your upper management. Their support will help to make your business recycling program more successful. Although not absolutely necessary, it is useful for upper management to sign a waste reduction and recycling policy or a written statement of support. This helps to make employees more serious about the program and proves to them that this is important. Management support can also be very valuable in efficiently avoiding possible road blocks.

Before you begin setting up a recycling program for your business, civic group, school or other interested organization, do your homework. Check out local ordinances to see if they might have an effect on what you recycle. Talk to other organizations in your area to see if they are recycling, and if so, what are they doing. Other organizations that recycle are always a great source of information and assistance. They have been where you are now.

PUT TOGETHER YOUR RECYCLING TEAM

Appoint, or hire, a Recycling Coordinator. This person will oversee the implementation of your recycling program and is critical to your program's success. The responsibilities of a recycling coordinator can include selecting a recycler and/or hauler, determining what needs to be collected, putting a collection system in place, acting as a liaison to upper management and educating fellow employees and customers.

Also, establish a recycling team made up of interested staff members. The size of this team will depend on the size of your business. It can range from one person to a group of people from each department. If your company is large enough to have a team, consider having at least one representative each from management, housekeeping or operations, procurement and administrative support. Each member will be able to offer input from their area. The team can help monitor the recycling program and provide input for its success. In addition, the team can assist in keeping containers contaminant-free, ensuring containers are emptied on a regular basis and encouraging others to participate in the recycling program.

APPENDIX 3

RESOURCES

BUY RECYCLED BUSINESS ALLIANCE (BRBA)

The National Recycling Coalition's Buy Recycled Business Alliance is an association of businesses around the nation that have pledged to help close the recycling loop by purchasing recycled products. Each state has a chapter of the alliance that is administered by the state recycling office or the state recycling association. The program is free to businesses and organizations. The only requirement is that your business make a pledge to buy recycled content products whenever feasible. Businesses can receive a number of benefits by joining the alliance, including up-to-date information on recycled content products, resources on continuing education, information about effective buy recycled programs, excellent networking opportunities with local and national businesses and organizations and the benefit of making an environmentally responsible decision as a business. If you would like to join or would like to receive additional information, call the SC BRBA at 1-800-SO-USE-IT.

US EPA'S WASTEWIS\$E

The EPA launched the WasteWi\$e program for businesses in 1994. The program is designed to assist businesses in taking cost-effective actions to reduce solid waste. The program provides assistance to businesses interested in starting waste reduction and recycling programs and covers issues such as setting up a recycling program, waste prevention, educating employees, buying recycled and manufacturing using recycled content. For more information about WASTEWIS\$E call the EPA at 1-800-EPAWISE or check out their WEB site at <http://www.epa.gov/>

US EPA's BUSINESS GUIDE FOR REDUCING SOLID

WASTE - This is a comprehensive how-to guide on assessing your facility's solid waste and choosing cost-effective waste reduction actions. To obtain a copy call the EPA at 1-800-424-9346.

	Scrap Wood: Pallets Wood Chips Food Waste: Solid/liquid fats	- 1 cu. yd. 55-gallon drum	30-100 (40 avg.) 500 400-410
	Tires: Car Truck Oil (used motor oil)	1 tire 1 tire 1 gallon	12-20 60-100 7
Other Materials			

*Density of yard trimmings is highly variable depending on moisture content.

This table is taken from the US Environmental Protection Agency's "Business Guide for Reducing Solid Waste." EPA/530-K-92-004, November 1993

HOW DO YOU KNOW WHAT TO COLLECT?

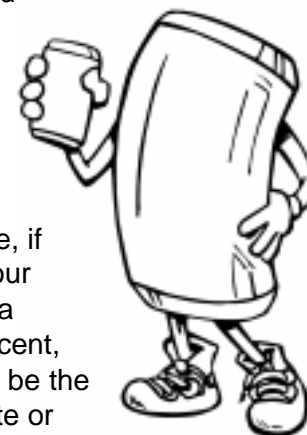
Conduct a waste audit of current disposal practices to find out what materials can be reduced and recycled. A waste audit can be as simple as examining facility disposal records, walking through the business and doing a spot check, or collecting waste and doing a detailed waste sort. The goal of the waste audit is to find out how much waste is being thrown away, what types of materials, what can be reduced and what materials are available for recycling in your community. A sample waste audit worksheet is included in the appendix, along with a list of resources that may be able to assist you.

Some of the materials you can expect to find in the waste stream that can be recycled include the following: newspaper, corrugated cardboard, mixed office paper, computer printout paper, white ledger paper, color ledger paper, magazines, glass, steel cans, aluminum cans, other scrap metal, plastics, used motor oil, antifreeze, concrete, wood, yard debris, food waste, tires, fluorescent lamps and many more.

Once you find out what is in your waste stream and have determined what is available for recycling, you will want to decide what to collect. Remember, start small, because you can always expand.

SET GOALS

Make sure you set waste reduction and recycling goals and make sure that they are realistic. If you set your goals too high, employees may not make the effort to achieve them. If you reach your initial goals, you can always set new ones. Realistic goals can be set by using the results from your waste audit. For example, if you think you can recycle 50 percent of your paper, set your first goal at 25 percent by a certain time and then increase it to 50 percent, three to six months later. These goals can be the percentage to be recycled by a certain date or perhaps a time scale for program expansion.



WASTE REDUCTION

In the field of waste management there is a hierarchy in the way we manage waste. We commonly call it the “three R’s” (Reduce, Reuse, Recycle) although there are also two other forms of management - landfilling and incineration.

Reuse, recycling, landfilling and incineration are all methods used to treat solid waste. Reduce is a method of preventing waste, if it is not generated, it does not need to be treated. This is a win-win situation for your business and the environment. It is good for your business because less is spent on waste treatment and on the purchase of new materials to be used. The environment benefits because less waste needs treatment and fewer natural resources are used.

There are four good rules to follow for a successful waste reduction program:

- Make wise purchasing decisions. Buy items in bulk. Buy products with the least packaging. Buy items in concentrate form. Buy only what you need.
- Buy items made from recycled materials - this means you are using resources that have already been used once. (See Buy Recycled Section)
- Use common sense and think about what you do. Use items wisely and ask yourself questions like “Do I really need a paper copy of my draft? Do I really need to print a copy of the E-mail?” This concept can be difficult to teach employees but if you give them some friendly encouragement, they will catch on. Consider striving for a paperless office.
- Be creative. Think of imaginative ways to get around being wasteful.

Waste reduction is the hardest component of a waste management program to teach your employees. Education is effective, but waste reduction requires people to change habits and to think about their actions. This is often difficult to monitor and put into practice. Make sure you continually offer support and advice.

Metals	Odd Plastic: Uncompacted Compacted/baled Mixed PET and HDPE (Dairy): Whole, uncompacted Aluminum (cans): Whole Compacted (manually) Uncompacted Ferrous (tin-coated steel cans): Whole Flattened Whole	1 cu. yd. 1 cu. yd. 1 cu. yd. 1 cu. yd. 1 cu. yd. 1 full grocery bag 1 case = 24 cans 1 cu. yd. 1 cu. yd. 1 case = 6 cans	50 400-700 32 50-75 250-430 1.5 0.9 150 850 22
	Yard Trimmings*: Leaves (uncompacted) Leaves (compacted) Leaves, vacuumed Grass clippings (uncompacted) Grass clippings (compacted) Finished compost	1 cu. yd. 1 cu. yd. 1 cu. yd. 1 cu. yd. 1 cu. yd. 1 cu. yd.	200-250 300-450 350 350-450 550-1,500 600

	Bottles: Whole Semi-crushed Crushed (mechanically) Uncrushed to manually broken	1 cu. yd. 1 cu. yd. 1 cu. yd. 55-gallon drum	500-700 1,000-1,800 1,800-2,700 300
Plastic	PET (Soda bottles): Whole bottles, uncompacted Whole bottles, compacted Whole bottles, compacted Baled Granulated 8 bottles (2-liter size) HDPE (Dairy): Whole, uncompacted Whole, compacted Baled HDPE (mixed): Baled Granulated	1 cu. yd. 1 cu. yd. gallord 30" x 62" gallord — 1 cu. yd. 1 cu. yd. 32" x 60" 32" x 60" semi-load	30-40 515 40-53 500-550 700-750 1 24 270 400-500 900 42,000

MARKETS

Before setting up your recycling collection program, a market for the materials you want to recycle will need to be found. Using the term market means finding a business that will recycle your materials. The best place to start looking for your market is to call your local County or City Recycling Coordinator. Your city or county may provide recycling collection services for businesses, and, even if they don't, the recycling coordinator may know of a private company that provides recycling services to local businesses.

Markets vary a lot. Some markets may be willing to pick up certain materials and some may need materials delivered. A fee for this service may be involved, it may be free, and sometimes the sale of the materials may even generate some money. The money received for recyclables depends on market conditions. If a charge is involved for recycling services check to make sure that it is cheaper than your garbage disposal fees. It should be!

LOGISTICS

The logistics of your recycling program are very important to ensure employee participation. If the program is not convenient, some employees may not participate. You need to answer some questions like "How do the recyclables need to be prepared? Do they need to be separated or can they be mixed? How often will the recyclables be picked up and what sort of access will be needed? How will the recyclables be transported to the pick-up location? What size bins will be needed? Where will these bins be placed?" A recycling bin for each employee is helpful, but if you can't afford them, an old cardboard box works just as well. Collection containers are essential to keep recyclables and trash separated.

Storing collected materials is another important area that must be taken into account. This collection area should be accessible to the staff collecting the recyclable materials and must be easily accessible to the hauler. Before finalizing a storage site, the recycling coordinator should contact the hauler along with local health and fire department officials to ensure the location meets the necessary health and safety requirements.

Make sure all of your collection containers are clearly labeled. The easiest way for employees to participate is if they constantly see signs that show what materials go in each container.

MONITORING THE PROGRAM

Keeping track of what is being recycled can be very useful information. If your recycling service is contracted, make sure they keep track of how much material is collected. Make sure that they report the recycling figures to you on a regular basis. This is a useful tool for encouraging and educating employees.

Once the program is in place, it is important to continually monitor and evaluate the strengths and weaknesses of your recycling program. The program should be evaluated every three to four months to determine if the number of materials should be expanded or if more education and participation are needed. The recycling coordinator should also do spot checks before each recyclable pick-up. Check for contaminants in the recyclables, you will be amazed at what you find.

Using the recycling team to monitor the program can be very beneficial. They can continually check recyclables for contaminants and can provide information and education to their co-workers.

EDUCATING PARTICIPANTS

A recycling program cannot be forced on a group of unwilling participants. The recycling coordinator must inform co-workers about how to participate in the recycling program as well as keep them updated on the program's progress.

A variety of educational tools may be used to teach people about your recycling program. E-mail, posters, brochures, bulletin boards and even an introductory party can be useful in telling people what to collect, how often materials will be collected, what items are considered contaminants (i.e., food waste, candy wrappers, pizza boxes, etc.) and where collection containers are located. Also, try to teach employees about waste reduction. This not only reduces garbage disposal but also can save money on supplies. Invite local and state recycling representatives to speak to employees about recycling and waste reduction.

Other Paper	Cardboard (Corrugated): Uncompacted Compacted Baled	1 cu.yd. 1 cu.yd. 1 cu.yd.	50-150 300-500 700-1,100
	Newspaper: Uncompacted Compacted/baled 12" stack	1 cu.yd. 1 cu.yd. ----	360-505 720-1,000 35
Glass	Miscellaneous Paper: Yellow legal pads Colored message pads Self-carbon forms; 8-1/2 x 11	1 case = 72 pads 1 carton = 144 pads 1 ream = 500 sheets	38 22 50
	Mixed ledger/office paper: Flat (u/c) Crumpled (u/c)	1 cu. yd. 1 cu. yd.	380/755 110-205/610
	Refillable Whole Bottles: Refillable Beer Bottles Refillable soft drink bottles 8oz. Glass container	1 case = 24 bottles 1 case = 24 bottles 1 case = 24 bottles	14 22 12

APPENDIX 2

CONVERSION FIGURES VOLUME TO WEIGHT

Category	Material (u= uncompacted, c= compacted & baled)	Volume	Estimated Weight (in pounds)
High-grade Paper	Computer paper: Uncompacted, stacked Compacted/baled 1 case	1 cu. Yd. 1 cu.yd. 2800 sheets	655 1,310 42
	White Ledger: (u)stacked/(c) stacked (u)crumpled/(c)crumpled Ream of 20# bond; 81/2x11 Ream of 20# bond; 81/2x14 White Ledger pads	1 cu.yd 1 cu. yd 1 ream=500 sheet 1 ream=500 sheet 1 case = 72 pads	375-465/755-925 110-205/325 5 6.4 38
	Tab Cards: Uncompacted Compacted/baled	1 cu.yd. 1 cu.yd.	605 1,215-1,350

After you educate your group about how to take part in the recycling program, you may want to provide incentives to encourage participation. Contests and certificates of appreciation can help motivate your participants to stay involved and help reduce your organization's waste stream. Place signs in your office that shows your organizations accomplishments with the recycling program and make sure your customers see them. Remember, to be effective, education needs to be ongoing.

BUY RECYCLED

Buying recycled products, also known as "closing the loop," is your final step to a successful recycling program. Recycling is a complete cycle. People must buy recycled products in order to create markets for recyclable materials. If you are not buying recycled, you are not recycling.

There are a number of myths about buying recycled products: They are inferior in quality to virgin products; they are difficult to find; and they are more expensive. These myths no longer hold true for most recycled content products. In the past five years many products, including recycled products, have seen tremendous improvements in technology and quality. Recycled content products are no longer difficult to find, many offer equal, and in some cases superior, quality to their virgin counterparts and most are available at competitive prices.

Buying recycled can offer many benefits to your company and it will be the job of your recycling coordinator to teach the purchasing staff how to find such products. As with any new product, it is important to either sample or get references about the quality of a product.

- Customers prefer recycled products. A recent Gallup poll showed that more than 70 percent of consumers want to shop at stores that recycle or offer recycled products.
- Businesses can make an environmental impact without sacrificing quality or profits. Many recycled products that are available today are equal in quality and competitively priced to their counterparts made from virgin materials.

- Every business can make a difference. A small to mid-sized company can keep thousands of pounds of material out of landfills each year, and a large company can divert thousands of tons. Why waste resources that can be recycled and returned to the marketplace?
- Buying recycled earns employee support. Many recycling and buy recycled initiatives have started as grassroots efforts by employees, who respect companies that are responding to environmental issues.
- Buying recycled products creates markets for recyclable materials.

APPENDIX 1

YOUR WASTE AUDIT

How does the recycling coordinator monitor progress? The first step is to perform a waste audit. A waste audit will give the coordinator an estimate of the building's or office's waste before the recycling program is begun. Using this estimate, the recycling coordinator can focus on areas in which recycling is most needed.

Performing a waste audit means sorting through a sample of a building's trash. The recycling coordinator and any assistants separate the contents into such categories as paper, cardboard, aluminum, styrofoam, and so on. The first audit will tell the coordinator what materials are being thrown away that could be recycled. Subsequent audits will allow the coordinator to track the building's progress. As the number of recyclables in the trash decreases, the money you save on disposal fees will likely increase.

The recycling coordinator can use the Waste Audit to help track his or her building's progress. At every audit, just record the weight (or volume) of materials in each category. A sample chart is located on the next 4 pages.



WASTE AUDIT

Location of Waste Audit: _____
 Person Conducting Audit: _____
 Date of Audit: _____

Sample Audit						
Activity and location	Materials generated	Estimate volume per week	Estimate percent of material that is clean	Estimate pounds per week for recycling	Ideas to reduce this available waste	
copy room	white paper color paper cardboard	1 trash can (90 gallon container)	95	approx. 30 lbs. 5 lbs. 25lbs.	double sided copies use both sides reuse boxes for out going mail	



NOTE:

The following Waste Audit worksheets are included so that you may make copies and use them at your convenience.

WASTE AUDIT

Location of Waste Audit: _____

Person Conducting Audit: _____

Date of Audit: _____

[illegible]